

PART 1 - GENERAL

- 1.1 Measurement and Payment .1 The unit prices bid for these items shall be full compensation for all work necessary and incidental for the excavation, stockpiling, re-spreading, shaping, and light compaction of organic soils to the cross sections, dimensions and grades on Drawings and as directed by the DR..
- .2 Organic materials surplus to the needs of dressing the shoulders and all of the final cut and fill slopes of the trail and identified as such at the time of excavation shall be removed and disposed of at the designated High Point storage site. This material shall be considered trail organic waste excavation and payment shall be made at the unit rate bid for that item.
- .3 The unit prices bid for organic soil stripping, stockpiling, and re-spreading shall include, but not be limited to: excavation of the organic soils, stockpiling at a designated area, management of organics in accordance with Section 01 35 44 - Cultural Resource Procedures and spreading over the work area, light compaction, final cleanup of the finished surface, and all other work necessary to complete the Work to the satisfaction of the DR.
- .4 Payment for “Organic Soils Excavation and Spreading in a Cultural Resource Sites” shall be as described in Section 01 35 44 – Cultural Resource Procedures, Clause 1.1.2.
- .5 Measurement for payment for stripping and distributing organic soils shall be per cubic metre, measured by cross section of the stockpile.
- .6 Ensure no invasive plant species, vegetation, or seeds are brought into the Park Reserve or transported between locations within the Park Reserve. Provide only uncontaminated products for incorporation into the work. This may include using washed materials or using only clean blast rock. Machinery and equipment shall be thoroughly cleaned before delivery to the Park Reserve or between movements within the Park Reserve. Costs for this work shall be included in the unit rates tendered. Existing soil that is contaminated with invasive species as determined by the OEM shall be considered waste excavation and disposed of at the J. Robbins site.
- .7 The unit price bid for placing wood chips along the trail edges and for the safety pad shall be full compensation for all work necessary and incidental for the loading, transporting, placing, shaping, surface finishing and cleanup of the wood chips. The chips will be supplied to the Contractor without charge by the Park at a location within the Park boundary for the Contractor to load.
- Measurement for payment for installation of the wood chips shall be by the cubic metre measured in place (length X width X depth) after the work is completed to the satisfaction of the DR.
- 1.2 Related Sections and References .1 Section 01 35 43 - Environmental Procedures.
- .2 Section 01 35 44 - Cultural Resources Procedures, for management of organic materials from archeological special management zones.
- .3 Section 01 74 11 - Cleaning.
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- .4 Section 31 11 00 - Clearing and Grubbing.
  - .5 Section 31 24 13 - Highway & Trail Excavation, Embankment, & Compaction.
  - .6 BC Ministry of Environment Standards and Best Practices for Instream Works.
- Not Used

PART 2 -  
PRODUCTS

PART 3 -  
EXECUTION

3.1 Sequence of  
Operation

- .1 To minimize impacts to the existing vegetation and sensitive sub-grade, the Work shall be performed in a manner to minimize the number of passages of heavy equipment over roots of trees to be protected in the area. The Work shall proceed sequentially along the trail: clearing (mostly complete) grubbing, then topsoil stripping and side casting or removal, mineral soil excavation to subgrade over a short section immediately followed by placing the geotextile ~~and root barrier~~, and placing of sub-grade material. Trucks bringing granular fill into the trail shall be used to back haul excess soil from the site. The subgrade not being tracked by machines and not left exposed overnight.
- .2 To minimize problems arising from erosion and siltation the work shall be scheduled such that the trail construction, surface finishing, and placing of erosion control blankets follow closely behind the slope shaping work.
- .3 Temporary environmental procedures must be in compliance with Federal legislation and regulations and direction from the OEM where required. Contractors shall reference the provincial MOE Standards and Best Practices for Instream Works (2004) for best management practices in sediment and erosion control during construction activities.
- .4 The Contractor shall submit a sediment and erosion control plan for the project site a minimum of ten days prior to start of work for review by the DR and the OEM. This environmental protection is incidental to the work
- .5 The DR and OEM may request changes to any plan to ensure that proposed methods for sediment and erosion control are satisfactory for the project site. No additional payment shall be made for environmental protection measures that are incidental to the work.
- .6 The Contractor shall install, maintain and remove all temporary environmental procedures as directed by the OEM and the DR.
- .7 Temporary environmental procedures, where required by the contract or as directed by the DR and OEM, are to be installed prior to starting any construction activities to prevent sediment from entering any waterway, within the vicinity of the construction site.

3.2 Preparation

- .1 The Contractor shall confirm with DR if the area to be to be stripped falls within a Cultural Resources Management area before starting stripping work.
  - .2 OEM must be notified by the Contractor at least 10 days prior to trail stripping activities to complete all necessary pre-work surveys. See environmental procedures for detailed information.
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- 3.3 Temporary Erosion and Sedimentation Control
- .1 Temporary erosion and sedimentation control shall be carried out in accordance with Section 01 35 43 - Environmental Procedures.
  - .2 To reduce problems with silts entering watercourses in the future the topsoil and organics stockpiled for re-spreading shall not be contaminated with underlying silts and clays.
  - .3 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent areas, that complies with EPA 832/R-92-005.
  - .4 Inspect, repair, and maintain erosion and sedimentation control measures during construction until work is complete and accepted by the DR.
  - .5 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- 3.4 Stripping of Organic Soils
- .1 Ensure that procedures are conducted in accordance with applicable environmental requirements of these specifications.
  - .2 Complete clearing and grubbing of the area prior to organic stripping.
  - .3 Do not contaminate organic soils that are going to be reused with mineral subsoils. Organic soils include litter-fibric-humic (LFH) layer and the upper mineral A horizon, topsoil. Mineral subsoil includes gravel, sand, clay, and silts.
  - .4 Situate the stockpiled material such that it does not interfere with local drainage patterns or with trail construction. Do not stockpile on undisturbed forest floor. Excavated soil and subsoil must be stockpiled within an area approved for Project use and at least 30 m away from any drainage features, drains, ditches, and 50 m from any waterbody or water course. If soil must be stockpiled closer than outlined, a plan is to be discussed and approved by OEM and DR before soil is stockpiled. Protect stockpiles from contamination and compaction.
  - .5 Topsoil from areas adjacent to roads and highways that is contaminated with invasive species shall be disposed off-site when directed by the OEM and DR.
  - .6 Notify DR and OEM immediately of suspected soil/fill contamination; chemical, petroleum or unusual odour; unusual debris such as metal, plastic, glass or demolition waste; dark or unusual staining. (Typically, stained soils are darker and may have a “wet” appearance but should not be confused with naturally occurring organic soils. Stained soils may have a distinct oily feel and typically are accompanied by odours). Segregate suspect soils and handle separately from other materials.
  - .7 During clearing, grubbing, and stripping works, the contractor must set aside and store all of the native organics that are stripped from the site, and many of the large stumps and logs to be re-used during site remediation. These items can be stored on site, space permitting, or can be temporarily stored at the High Point storage area within the park (within 5 km of the project site).
  - .8 Stockpiles may be located onsite, but must be pre-approved by OEM and DR. Soils may be piled in spots that will be disturbed within the footprint but shall not be located in the forest outside of the project footprint without approval by the
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- OEM and DR.
- .9 Pile topsoil and forest organic litter with mechanical hoe alongside the proposed trail where possible as directed by OEM and DR. These piles will generally be in the form of small windrows on both sides of the trail and tight to the excavation to minimize impacts on the adjacent undisturbed ground. This will also facilitate re-spreading the material on the new shoulders of the trail. Approximately 0.1 cu.m to 0.2 cu.m of material is required per linear meter of trail edge for each side of the trail across level ground, but more will be required where cross slopes or significant cuts and fills are encountered. Larger volumes of topsoil and forest organic litter may only be windrowed if approved by the OEM and DR.
- .10 For trees located next to the trail that are to be retained and whose roots are exposed during topsoil stripping, structural tree roots greater than 5cm diameter shall be hand excavated to avoid damage to roots and fabric shall be placed over exposed roots.
- 3.5 Stripping of Organic Soils Within Archeology Sites
- .1 In addition to the requirements of the above clause 3.2 the following shall apply to organic soils within the archeology sites identified by the DR. During the progress of this work the OEM shall be present to observe and assist with placing the material.
- .2 Organics shall be removed from the archeology site and deposited a maximum of about 6 metres into the adjacent forest.
- .3 The material deposited into the forest shall be spread to a maximum depth of 200 mm. Spreading of this material can be aided by the excavation equipment 'sprinkling' the organics while depositing it and re-spreading it after deposit. The equipment tracks must remain within the clearing limits. Where the arm can reach into the forest without damage to trees, machine spreading is permitted. Manual spreading shall be used to obtain the final thickness.
- .4 Maintain existing drainage patterns. Do not deposit materials into water or bury growing plants. Do not deposit materials in Amphibian areas except as directed by OEM.
- .5 Refer to Section 01 35 44 - Cultural Resources Procedures, for additional details regarding working in archeological special management zones and chance finds.
- 3.6 Preparation of Shoulders
- .1 After trail structure is in place (excavation, installation of the geotextile (if required), root guard (if required), subbase, and base) the shoulders shall be prepared.
- .2 Grade shoulders of trail establishing natural contours and eliminating uneven areas and low spots, ensuring positive drainage. The prepared surface shall not deviate by more than 50 mm over a 1.0 m distance.
- .3 Verify that grades are acceptable. Notify DR and receive acceptance or make corrections to the grades as directed by DR.
- 3.7 Re-spreading of Organic Soils
- .1 Re-spread organics and topsoil after DR has accepted base course. The re-spreading shall take place as soon as practical after the sub-base and base is completed to minimize self-compaction of the topsoil and to minimize damage of areas used for temporary stockpiling of the material. Spread topsoil during dry conditions in a uniform layer over unfrozen subgrade free of standing water.
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- .2 Lightly compact the finished area to minimize future settlement of the surface.
  - .3 After lightly compacting the organic soil, place any required erosion and sedimentation controls needed, including erosion control blankets, and restore and stabilize areas disturbed.
  - .4 All cut and fill slopes, as well as all trail shoulders are to be covered in minimum 15 cm of native organics, with C32BD Erosion Control Blankets (ECB) installed over top. ECB shall be secured with hooked rebar "pins". ECB may be omitted on slopes less than 5 m in height, as directed by the Geotechnical Engineer and OEM.
  - .5 Large woody debris (stumps, logs, etc.) salvaged from the site during grubbing/stripping are to be placed on top of the ECB, as directed by the Geotechnical Engineer and OEM. Depending on the reach of machinery, this slope remediation may need to be done incrementally. The contractor must plan the work stages accordingly to ensure this final step of slope remediation can be completed as intended.
  - .6 Soil respreading and contouring will be done under the direction of the OEM.
  - .7 Placing, shaping, surface finishing and cleanup of the wood chips along the trail edges and for the safety pad shall be completed per tender drawings and to the satisfaction of the DR.
- 3.8 Cleaning
- .1 Proceed in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

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